

The Impact of Cooperative Learning on Female Medical Students' Happiness and Social Support

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Abstract

Cooperative learning has appeared as a new approach to teaching. This approach is utilized for small heterogeneous groups of students who cooperate to achieve a common goal. This study aimed at investigating the impact of cooperative learning on female medical students' happiness and social support. To this end, 72 female students of medicine at Shiraz Medical School were selected using cluster sampling and divided into experimental and control groups. The students were administered social support and happiness questionnaires as a pre-test. The same questionnaires were administered to them at the end of the term as a post-test. The students in the experimental group were taught to use cooperative learning strategies and the students in the control group followed the traditional approach. Data were analyzed using SPSS. The statistical procedures used for analyzing the data were mean, standard deviation, and multivariate analysis of covariance. The findings of the study indicated that cooperative learning had a significant impact on the level of happiness and social support of students compared to the conventional approach.

Keywords: cooperative learning, happiness, social support,

1. Introduction

Human beings have always endeavored to transfer their experience and knowledge to their children and future generations. For this purpose, researchers have investigated different approaches to teaching. One of newly investigated approaches to teaching is cooperative learning. Cooperative is a new approach which has emerged over the past decade. Researchers in the field of education are mainly concerned with presenting a new approach which can prepare students to face a number of challenges in learning issues. Therefore, they focused their attention on learner-centered methods

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which could meet the needs of students (Richards & Rogers, 1986). Cooperative learning refers to a teaching approach that is used for small groups of students who strive to achieve a common goal. (Kagan, 1994). Students are responsible for their teammates' learning and their own.

The main tenets of cooperative learning are as follows:

1. Positive Interdependence: it occurs when what individuals gain in teamwork activities are correlated positively.
2. Individual Accountability: it occurs when all students are accountable for performing a share of their work and for learning the materials.
3. Equal Participation: this occurs when each member of the group is given an equal share of input and responsibility.
4. Simultaneous Interaction: it occurs when the time of the class is designed to allow a myriad of student interactions during the period.

There are different ways through which cooperative goals can be achieved. Johnson & Johnson (2002) have classified them as follows: Teams-Games-Tournaments (TGT), Group Investigation (GI), Learning Together & Alone, Constructive Controversy (CC), Student Teams Achievement Divisions (STAD), Team Accelerated Instruction (TAI), Jigsaw Procedure, Complex Instruction (CI), Cooperative Learning Structures, and Cooperative Integrated Reading & Composition (CIRC).

One of the significant aspects of any classroom is social support which might affect students' academic achievement, physical and mental health (Ghaith, 2002). The main factor in social support is social relationship and consequently the establishment of positive social relations leads to more social support (Hosseini et al, 2012).

Most of the definitions about social support are rooted in individuals' perception of being liked and attracting other people's attention. The most common definition of social support is emphasis on the quality of the relationship with people who provide support when we are in need. Orozco (2007) believes that social support refers to the help and support that parents, friends, and other people provide which an individual perceives based on his social status. In another definition, Cobb (1976) states that social support refers to psychological and material support received from social networks. He maintains that a feeling of being valued and being loved is created in the individual. Hupcey (1998) believes that social support includes the following factors: source, the mutual sense of well-being or care, positive outcome, the existence of a relationship between the provider and the receiver, and lack of bias in support. It is worth mentioning that, not all the relationships that an individual has with others are considered as social support unless that individual considers them as available and suitable for meeting his needs (Ghaedi & Yaaghoobi, 2008).

Among the main objectives of any educational system in every country is the creation of mental health and increasing the level of happiness in students. Happiness is an inherent characteristic of human beings which has engaged the minds of thinkers to the extent that Aristotle described it as "the development and nourishment of the loftiest traits of human beings" (Samakamani, 2006). Kashdan (2004) has defined happiness as a set of emotions and cognitive evaluation, and believes that happiness is a positively evaluated quality of individuals' lives. Argyle (2001) defines happiness as a state of joy (positive emotions), being satisfied with life, and lack of depression and anxiety (negative emotions). This is probably the most comprehensive definition of happiness because both positive and negative emotions have been taken into account as internal factors and life satisfaction as an external factor. Diener, Suh and Oishi (1997) believe that happiness has three constituents: cognitive, affective, and social. The cognitive part involves a kind of thinking and processing which leads to optimism. The affective part refers to the happy and positive temperament, and the social constituent represents the expansion of relations of an individual with others and hence the establishment of social support.

Looking at the approaches to teaching, we can find three main approaches; the first is "competitive approach" in which students try to win in competition to other students. In this

approach, the prevailing attitude is that if you win then I am the loser and if I win then others will lose. This approach can be the source of fear, anxiety and frustration among students. Another approach is the "individualistic learning approach" in which the success or failure of an individual is related to himself rather than others. In this approach, fatigue, lack of variety and motivation, isolation and withdrawal from others can be the consequences of the learning process. The third approach is the "cooperative approach".

A large number of studies indicate that the groups that participate in cooperative learning not only have a more effective learning but they also have more positive attitudes and more skills in interpersonal relationships. It is important to mention that these skills can be acquired and families and schools play a significant role in developing these skills (Ghaltash, 2004). Cooperative learning has a long history. This approach has attracted a lot of researchers' attention during the last three decades because studies have shown that students have more academic achievements when they have more chance of interacting with each other and when they work together to reach a common goal (Johnson & Johnson, 2002; Slavin, 1996). Slavin (1995) maintains that cooperative learning is a means of strengthening thinking skills and enhancing learning, improving the relationship among students of different races, and preparing them to play a role in group activities. According to Johnson & Johnson (1994), cooperative learning is an approach in which students cooperate together in a heterogeneous group to maximize their learning. In fact, they cooperate together to reach a common goal and to solve problems. It is worth mentioning that not every group work is necessarily considered as cooperation. In group work activities, students might try to compete with each other and just pretend to be cooperating; whereas in cooperative work, students work together in a non-competitive way to reach common goals (Joyce, Weil & Calhoun, 2004).

This study seeks to investigate the effectiveness of cooperative learning on female medical students' happiness and social support.

2. Literature Review

Some researchers investigated the relationship between cooperative approach, social support, and happiness (e.g. Johnson et al., 1985) and indicated that cooperative learning is correlated with social support, and the more students participate in cooperative activities, the more social support they will receive. Ghaith (2002) showed that cooperative learning and the level of teachers' support for their students are positively correlated with students' academic achievement and their perceived academic support from their teachers and their classmates. Burchinal et al. (2008) assessed the role of protective factors (parents, friends, and school) in academic achievement and social adjustment of the students. Also, Lavasani et al. (2011) proved the effectiveness of cooperative approach in students' social skills. Keshavarz and Vafaeian (2007) investigated the factors affecting happiness and concluded that there is a positive relationship between the level of happiness and physical and mental health, family and social relationship, optimism about the future, and attitude toward joy.

In another study, Ghasemi, Abedi & Baghban (2007), studied the effect of group teaching based on Snyder's hope theory on elderly's level of happiness and found that group teaching brought about an increase in the level of happiness. From among all the previous studies, it can be concluded that students must be provided with social support and must have happiness and mental health in order to be able to deal with their assignments. Therefore, students must be provided with a suitable environment in which they receive social support and feel happy.

A similar study was done by Babamoradi, Karami & Sadipour (2017) that investigated the effectiveness of cooperative learning in social support and happiness. The study was done on male students in the city of Quds. They indicated that cooperative learning had a positive effect on the level of happiness and social support. However, the participants in the study were all boys and to the best of the researchers' knowledge, no study has been done investigating the effect of cooperative learning on female students' level of happiness and social support.

In another study, Johnson et al. (1985) investigated the effect of prolonged implementation of cooperative learning on social support within the classroom. They found that cooperative learning was highly related to social support within the classroom and that the longer and more frequently students engaged in cooperative learning, the greater the social support within the classroom. Ghaith (2002) examined the relationship between cooperative learning, perception of social support, and academic achievement. The findings revealed that cooperative learning and the degree of academic support that is provided by teachers are positively correlated with achievement, and learners' feelings of alienation from school were found to be negatively correlated with achievement. Moreover, the analysis revealed that cooperative learning is positively correlated with the perceived degrees of academic and personal support that is provided by teachers and peers, but not correlated with the feelings of alienation from school.

Dominguez-Fuentes and Hombrados-Mendieta (2012) investigated the association between perceived social support and happiness in immigrant women in Spain based on Social Convoy Model. They found that the main social support predictor of happiness was satisfaction with the support received. They also found that the best predictors of happiness were emotional support from the family and instrumental support from the indigenous population and associations.

In another study, Liping (2001) examined the relationship between happiness and social support in a survey of 304 men and women using questionnaires. The results indicated that Men had significantly more social support and showed more positive affect compared to women. Another finding of the study was that women's use of social support was higher than that of men. Also, there were no gender differences in happiness, interpersonal support and negative affect.

3. Method

3.1. Participants

The participants who took part in this study were 72 students of medical sciences at Shiraz University of Medical Sciences, Iran. They were selected using cluster sampling method. 36 students were assigned to the control group and 36 students were assigned to the experimental group. The students were between 18 and 23 years of age.

3.2. Design

This is a quasi-experimental study with an intact pre-test post-test design in which the participants were selected and assigned to experimental and control groups. The quasi-experimental study involves intact groups of subjects instead of assigning the participants randomly to the experimental and control groups (Dörnyei, 2007).

3.3. Instruments

The instruments used in this study were as follows:

Oxford Happiness Questionnaire (OHQ): The Oxford Happiness Questionnaire was developed by Hills and Argyle (2002): The Oxford Happiness Questionnaire was derived as a modified version of the Oxford Happiness Inventory by Argyle et al. (1989). They suggested that happiness is a combination of three main components: the frequency and degree of positive affect or joy; the average level of satisfaction over a period; and the absence of negative feelings such as depression and anxiety. This questionnaire has 29 items which include the 20 items of the Oxford Happiness Inventory and an additional 9 items (Nourbala et al, 2002). This revised questionnaire has 5 scales including life health, positive mood, satisfaction, competency and self-esteem. Responses are based on a 6-point Likert scale. Hills and Argyle (2002) reported acceptable validity for the Oxford Happiness Questionnaire by providing data on correlations with other self-report scales of personality traits, human strengths and subjective well-being. In Iran, Alipoor and Noorbala (1999), calculated the Cronbach's alpha reliability coefficient of this questionnaire as 0.93. The personality variables correlate very strongly with this scale. With regard to its construct validity, the Oxford Happiness Questionnaire seems to be the preferred measure.

Social Support Appraisals (SS-A) scale: The second instrument used in this study was Social Support Appraisals (SSA). This scale is comprised of 23 items on family support (8 items), friends support (7 items), and support from others (8 items) (15). Reliability of SS-A has been determined at 0.75 by Asgari et al. (2010) using Cronbach's alpha for the Iranian population. In order to confirm the reliability of SS-A, the researchers measured the internal consistency by using Cronbach's alpha, which was estimated at 0.77, 0.76, 0.74, and 0.84 for the social support from family, friends, others, and total of social support, respectively.

3.4. Procedure

In order to determine the effect of cooperative learning on students' social support and happiness, 72 students of two classes at Shiraz University of Medical Sciences were selected to participate in this study. One class was assigned to the experimental group to receive the treatment in cooperative learning method. The other class was assigned to the control group. To make sure that the two groups did not differ significantly, both groups were administered a pre-test. The results of the independent-samples t-test for comparing the pre-test scores of the two groups indicated that the two groups did not differ significantly regarding their social support and happiness scores. In one class, the instruction was based on teacher-directed classrooms in which the teacher gave a lecture and the students took notes. In the other class, the materials were presented to the experimental group using cooperative learning techniques. In one session, the students were explained in detail about the cooperative learning approach. They were divided into nine groups of four.

A name was assigned for each group and every group selected a leader. The materials were presented to the students so that they could exchange their ideas about them. In the other group, the same materials were presented using traditional method. The leader of each group talked about the result of their discussion, and the results were ultimately summed up by the teacher. The teacher's encouragement was given to the groups while the success belonged to all members of the groups. However, the students were notified that their scores in the final exam will be based on individual qualifications. There were fourteen sessions totally. In the fourteenth session, the students were given a pre-test.

4. Results

The results of the frequency distribution of each group are presented in Table 1. The descriptive statistics of pre-test and post-test of happiness and social support are provided in Table 2.

Table 1. Frequency distribution of experimental and control group

Group	Frequency	Percentage
Experimental	36	50%
Control	36	50%

Table 2. Descriptive statistics and standard deviation of pre-test and post-test of Happiness and Social Support

Variable	Group	Pre-test		Post-test	
		Experimental	Control	Experimental	Control
Social Support	Mean	14.47	15.21	17.21	14.97
	SD	3.32	2.65	2.95	3.62
Happiness	Mean	51.12	48.36	52.47	49.38
	SD	8.96	6.52	6.38	5.94

The results of Table 2 indicate that the mean and the standard deviation of pre-test and post-test of the control group in the Social Support variable were 14.47, 3.32 and 17.21, 2.95

respectively. The mean and the standard deviation of pre-test and post-test in Social Support variable in the control group were 15.21, 2.65 and 14.97, 3.62 respectively.

The mean and the standard deviation of pre-test and post-test in Happiness variable in the experimental group were 51.12, 8.96 and 52.47, 6.36 respectively. The mean and the standard deviation of pre-test and post-test in Happiness variable in the control group were 48.36, 6.52 and 49.38, 5.94 respectively.

The results indicated that in both Happiness and Social Support, the mean of the experimental group had an increase in the post-test compared to that of the control group.

Considering the fact that this study was a pretest posttest design, the researchers used Analysis of Covariance (ANCOVA) in order to analyze the data and to control the effect of the pretest. In order to ensure about the precision of the findings, the following assumptions should be satisfied: the homogeneity of regression coefficient, correlation of dependent variables, homogeneity of variance-covariance matrices, and the homogeneity of variances. To test the homogeneity of variance-covariance matrices, Box's M test was performed. The results are provided in Table 3.

Table 3. Box's Test of Equality of Covariance Matrices

Box's M	F	df1	df2	Sig.
1.86	.72	3	71432	.61

The results in Table 3 indicate that the significance level of Box's M test is larger than 0.05. Therefore, it can be concluded that the null hypothesis is accepted and the variance-covariance matrices are homogeneous. To test the homogeneity of variances, Levene's test was used. The results of the Levene's test are presented in Table 4.

Table 4. Levene's Test of Equality of Variances

Variable	F	df1	df2	Sig.
Social Support	1.62	1	70	0.21
Happiness	0.47	1	70	0.62

The results indicated that in both variable of Happiness and Social Support, the significance level was greater than 0.05. Thus, it can be said that the assumption of the equality of variances is met. Moreover, the results of the homogeneity of the regression coefficients are reported in Table 5.

Table 5. Homogeneity test of regression coefficients

Source of change	Sum of Squares	df	Mean Squares	F	Sig.
The interaction of group and Social Support pretest	3.24	1	3.24	0.58	0.61
The interaction of group and Happiness pretest	51.12	1	51.12	2.75	0.24

Table 5 provides the results of the homogeneity test of regression coefficients. According to Table 5, the value of F for the interaction between group and social support pretest is .58 and the significance level is 0.61. Therefore, the data support the homogeneity of regression slopes. Also, the value of F for the interaction of group and happiness is 2.75 and the significance level is 0.24. The interaction between group and Happiness is not statistically significant and the data support the homogeneity of regression slopes.

Also, Bartlett's test was used to determine the correlation between dependent variables. The results of Bartlett's test are presented in Table 6 below.

Table 6. Bartlett's Test of Sphericity

Approx. Chi-Square	df	Sig.
23.72	1	0.003

The results of Bartlett's test indicate that there is a statistically significant correlation between dependent variables. With all the necessary assumptions met for the Multivariate Analysis of Covariance (MANCOVA), we present the results in Table 7.

Table 7. The results of MANCOVA

Tests	Values	F	df	Error degree of freedom	Sig
Pillai's Trace	.372	8.67	2	65	0.001
Wilks' Lambda	.847	8.67	2	65	0.001
Hotelling's Trace	.481	8.67	2	65	0.001
Roy's Greatest Root	.481	8.67	2	65	0.001

According to Table 7, the significance level of Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Greatest Root is less than 0.05. Therefore, the null hypothesis is rejected and we conclude that there is a statistically significant difference between the Social Support and Happiness.

Table 8. Univariate ANCOVA

Source	Dependent Variable	Sum of Squares	df	Mean Squares	F	Sig.
Group	Social Support	82.34	1	82.34	13.52	0.002
	Happiness	187.94	1	187.94	8.92	0.003
Error	Social Support Posttest	362.31	68	6.35		
	Happiness Posttest	1214.37	68	22.61		

According to Table 8, the mean of Social Support in the experiment is significantly different from that of the control group after eliminating the effect of pretest. The modified mean of social Support in the experimental group posttest is 16.21 and for the control group, it is 14.92. The findings indicate that the cooperative learning approach, compared to the traditional approach, has been more effective in students' social support. Also, the mean of Happiness in the experimental group is significantly different from that of the control group after eliminating the effect of pretest. The modified mean of Happiness in the experimental group posttest is 49.72, and for the control group, it is 45.91. Therefore, we can conclude that the cooperative learning approach, compared to the traditional approach, has been more effective in students' level of happiness.

5. Discussion and conclusion

This study aimed at investigating the impact of cooperative learning approach on female medical students' level of happiness and social support. The results indicated that cooperative learning approach had a statistically significant impact on students' happiness and social support. The results of this study are indirectly in line with those of Johnson et al (1985), Ghaith (2002), Burchinal et al (2008), and Lavasani et al (2011). One of the reasons why cooperative learning was effective in students' social support was that the students learned social skills when they participated in cooperative activities and consequently they could make friends in the group and establish positive interactions. In fact, they received psychological support from their classmates in the group and this helped the students to have a feeling of being lovely and respected. In such an atmosphere, learners learn together without feeling stressed, and learning from each other is maximized.

In cooperative learning approach, learners share their resources and each student puts his efforts on a specific part of the assignment. This, in turn, might reduce students' hatred of school (Ghaith, 2002). Students who are taught using this approach, trust others and enjoy having social interaction with others. They learn the right way of expressing their positive and negative feelings, and they also learn how to react to other people's criticism. They can manage their relationships better and they will probably find more friends. They can more easily cope with conflicts and challenges. The students' happiness scores were also analyzed. The results of pretest and posttest in the experimental and the control groups indicated that there was a significant difference in the posttest scores in the two groups. Therefore, we can conclude that the cooperative learning approach has been more effective in students' level of happiness compared to the traditional approach. This finding is in line with that of Keshavarz and Vafaeian (2007), Ghasemi et al (2007), Hills & Argyle (2011), Kocak (2008).

In explaining the results, it can be said that one of the characteristics of cooperative learning is the formation of learning groups which serve two functions: on the one hand, these groups provide a friendly atmosphere for the students to be together, and on the other hand, they help weak students learn better and more efficiently. Cooperative learning approach is an effective tool in the ability to ask, the clarity of expressing one's ideas, developing mutual respect, and creating a learning milieu full of enjoyment (Mizuno, 2011).

In this process, students can manage their relationships better and know each other better and they can establish friendly relationships with other students. Consequently, constructive relationships with others lead to a higher level of happiness.

On the other hand, these groups of people experience a lower level of stress and as Schiffrin & Nelson (2010) believe, one of the most significant factors in individuals' happiness is the level of stress. In other words, the lower the stress, the higher the happiness. Gilman (2001) found that depression, stress, and having a weak relationship with peers can lead to lack of happiness in individuals. Another outcome of using cooperative learning approach is academic achievement. Studies have shown that cooperative learning approach has a significant impact on students' academic achievement (McMaster & Fuchs, 2002). Therefore, it can be concluded that the higher the academic achievement, the higher the satisfaction and hence the higher the level of happiness. Considering the useful outcomes of cooperative learning approach, the use of this approach seems necessary in any educational settings.

Items marked (R) should be scored in reverse

SD = strongly disagree, MD = moderately disagree, SLD = slightly disagree 4,
SLA = slightly agree, MA = moderately agree, SA = strongly agree

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Appendix I. The Oxford Happiness Questionnaire

Question		SD	MD	SLD	SLA	MA	SA
1. I don't feel particularly pleased with the way I am.	R						
2. I am intensely interested in other people.							
3. I feel that life is very rewarding.							
4. I have very warm feelings towards almost everyone.							
5. I rarely wake up feeling rested	R						
6. I am not particularly optimistic about the future.	R						
7. I find most things amusing							
8. I am always committed and involved.							
9. Life is good.							
10. I do not think that the world is a good place.	R						
11. I laugh a lot.							
12. I am well satisfied about everything in my life.							
13. I don't think I look attractive.	R						
14. There is a gap between what I would like to do and what I have done.	R						
15. I am very happy.							
16. I find beauty in some things.							
17. I always have a cheerful effect on others.							
18. I can fit in (find time for) everything I want to.							
19. I feel that I am not especially in control of my life.	R						
20. I feel able to take anything on.							
21. I feel fully mentally alert.							
22. I often experience joy and elation.							
23. I don't find it easy to make decisions.	R						
24. I don't have a particular sense of meaning and purpose in my life.	R						
25. I feel I have a great deal of energy.							
26. I usually have a good influence on events.							
27. I don't have fun with other people.	R						
28. I don't feel particularly healthy.	R						
29. I don't have particularly happy memories of the past.	R						

Appendix II. Social Support Appraisal Scale

- | | Strongly disagree | Disagree | Agree | Strongly agree |
|--|-------------------|----------|-------|----------------|
| 1. My friends respect me. | | | | |
| 2. My family cares for me very much. | | | | |
| 3. I am not important to others. | | | | |
| 4. My family holds me in high esteem. | | | | |
| 5. I am well liked. | | | | |
| 6. I can rely on my friends | | | | |
| 7. I am really admired by my family. | | | | |
| 8. I am respected by other people. | | | | |
| 9. I am loved dearly by my family. | | | | |
| 10. My friends don't care about my welfare. | | | | |
| 11. Members of my family rely on me. | | | | |
| 12. I am held in high esteem. | | | | |
| 13. I can't rely on my family for support. | | | | |
| 14. People admire me. | | | | |
| 15. I feel a strong bond with my friends. | | | | |
| 16. My friends look out for me. | | | | |
| 17. I feel valued by other people. | | | | |
| 18. My family really respects me. | | | | |
| 19. My friends and I are really important to each other. | | | | |
| 20. I feel like I belong. | | | | |
| 21. If I died tomorrow, very few people would miss me. | | | | |
| 22. I don't feel close to members of my family. | | | | |
| 23. My friends and I have done a lot for one another. | | | | |